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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,408	10/28/2003	Venkat Rangan	112-0122US	5639
29855 7590 09/20/2007 WONG, CABELLO, LUTSCH, RUTHERFORD & BRUCCULERI, L.L.P. 20333 SH 249 SUITE 600 HOUSTON, TX 77070			EXAMINER SUN, SCOTT C	
			ART UNIT 2182	PAPER NUMBER
			MAIL DATE 09/20/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/695,408	<b>Applicant(s)</b> RANGAN ET AL.	
	<b>Examiner</b> Scott Sun	<b>Art Unit</b> 2182	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 May 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments, see appeal brief, filed 5/14/2007, with respect to the rejection(s) of claim(s) 1-36 under U.S.C 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Testardi (Pub #2003/0140210).

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claim(s) 1, 10, 19, 28 includes claim language, "may be", that merely suggests or makes optional but does not require steps to be performed, or does not limit a claim to a particular structure. Therefore, it is uncertain as to the limiting effect of the language, rendering the claim scope unascertainable.

5. Claims 2-9, 11-18, 20-27, 29-36 are rejected because of their dependency on one or more of the above rejected claims.

6. The following rejections are made based on the examiner's best interpretation of the claims in light of the 35 USC 112 rejections above.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-36 are rejected under 35 U.S.C. 102(e) as being anticipated by Testardi (Pub #2003/0140210).

9. Regarding independent claims 1, 10, 19, and 28, Testardi discloses a network, switch fabric, storage processing device, method, comprising:

at least one host adapted to be connected to a switched fabric (hosts 14a-14n connected to fabric 20 shown in figure 3);

at least two storage units, each adapted to be connected to a switched fabric (storage units 22a-22n shown in figure 3).

a switched fabric (switched fabric 20, figure 2) for connection to and coupling of at least one host and at least two storage units (hosts and physical devices shown in figure 2), comprising:

at least one switch for coupling to the at least one host and the at least two storage units (one or more switches discussed in paragraph 62),

a storage processing device (virtualization engines 34a-c, figure 3, details in figures 4A-4C, and later figures) coupled to the at least one switch and for coupling to the at least one host and the first and second storage units of the at least two storage units, where the first and second storage units may be directly connected to the storage processing device or may be coupled through the at least one switch (storage device may be implemented to be part of switch or storage device, paragraph 67), the storage processing device to migrate data between first and second storage units of the at least two storage units whether the first and second storage units are directly connected to the storage processing device or are coupled through the at least one switch (online migration, paragraph 65), the storage processing device comprising:

An input/output module (collection of fast paths processors) for coupling to a first and second storage units (storage units 20a-20n) including processors (fast path processors, "FP", shown in figure 4A-4C) to receive, operate on, and transmit network traffic (paragraphs 64, 72, 73);

A control module (control path processors, "CP", shown in figures 4A-4C) coupled to said input/output module, said input/output module and said control module being configured to interactively perform data migration (on-line migration) from the first storage unit to the second storage unit (paragraph 74-75, details of migration discussed in paragraphs 204-212).

Examiner notes that the preambles of claims 1 and 28 appear to be directed to the environment in which the storage processing device/method is used. Therefore, the

above rejections are based on the assumption that the preamble limits the claim, and therefore identical in scope to claim 19.

10. Regarding claim 2, Edsall and Testardi combined disclose claim 1, and Testardi further discloses wherein said processors include table information (figure 23, Rmap 560 and redirect tables) related to data migration (paragraph 204) and wherein said control module is coupled to said table information to maintain said table information for data migration (paragraph 206, 209).

11. Regarding claim 3, Edsall and Testardi combined disclose claim 2, and Testardi further discloses wherein table information includes a barrier entry (barrier range) and said processors delay data write operations if said barrier entry relates to said data write operation (retrieved later, paragraph 207).

12. Regarding claim 4, Edsall and Testardi combined disclose claim 2, and Testardi further discloses wherein said table information includes an entry (entries of tables shown in figure 23) related to the extents in the data migration, said entry defining an extent operation type (paragraph 204, 207).

13. Regarding claim 5, Edsall and Testardi combined disclose claim 4, and Testardi further discloses wherein said table information further includes a legend entry (rmap) for each extent operation type defining operations for the extent (paragraph 207).

14. Regarding claim 6, Edsall and Testardi combined disclose claim 5, and Testardi further discloses wherein said table information further includes entries referenced by said legend entry defining physical extent location. Examiner notes that the data migration is performed between two physical volumes, and therefore the table

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information mapping extents in the migration operation reference physical locations of the extents.

15. Regarding claim 7, Edsall and Testardi combined disclose claim 6, and Testardi further discloses wherein legend entries include entries indicating data not migrated (entry value 1), data migrated (entry value 2), and a barrier entry for data being migrated (barrier range; read-only field 'r/o').

16. Regarding claim 8, Edsall and Testardi combined disclose claim 7, and Testardi further discloses wherein said processors delay data write operations if said barrier entry relates to said data write operations ("write operation faulted to CP to be later retried", paragraph 207).

17. Regarding claim 9, Edsall and Testardi combined disclose claim 8, and Testardi further discloses wherein said control module provides commands to copy data and places said barrier entry for said data being copied (paragraph 206).

18. Regarding claims 11-18, 20-27, and 29-36, examiner notes that these claims are substantially similar to claims 2-9 above. The same grounds of rejection are applied.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott Sun whose telephone number is (571) 272-2675. The examiner can normally be reached on M-F, 10:30am-7pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim N. Huynh can be reached on (571) 272-4147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SS



**KIM HUYNH**  
**SUPERVISORY PATENT EXAMINER**

9/17/07